

# UTILITY PATENT APPLICATION TRANSMITTAL

## (Small Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.  
181/01332Total Pages in this Submission  
33**TO THE ASSISTANT COMMISSIONER FOR PATENTS**Box Patent Application  
Washington, D.C. 20231

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for an invention entitled:

MESSAGE DEVICE

and invented by:

Michael KOCHMAN, et al.

 JCS64 U.S. PTO  
 09/552586  
 04/19/00
If a **CONTINUATION APPLICATION**, check appropriate box and supply the requisite information:
☐ Continuation    ☐ Divisional    ☒ Continuation-in-part (CIP) of prior application No.: PCT/IL99/00686

Which is a:

☐ Continuation    ☐ Divisional    ☐ Continuation-in-part (CIP) of prior application No.:

Which is a:

☐ Continuation    ☐ Divisional    ☐ Continuation-in-part (CIP) of prior application No.:

Enclosed are:

**Application Elements**

1. ☒ Filing fee as calculated and transmitted as described below
2. ☒ Specification having 14 pages and including the following:
  - a. ☒ Descriptive Title of the Invention
  - b. ☒ Cross References to Related Applications (if applicable)
  - c. ☐ Statement Regarding Federally-sponsored Research/Development (if applicable)
  - d. ☐ Reference to Microfiche Appendix (if applicable)
  - e. ☒ Background of the Invention
  - f. ☒ Brief Summary of the Invention
  - g. ☒ Brief Description of the Drawings (if drawings filed)
  - h. ☒ Detailed Description
  - i. ☒ Claim(s) as Classified Below
  - j. ☒ Abstract of the Disclosure

**UTILITY PATENT APPLICATION TRANSMITTAL**  
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33

**Application Elements (Continued)**

3. ☒ Drawing(s) *(when necessary as prescribed by 35 USC 113)*  
a. ☒ Formal      b. ☐ Informal      Number of Sheets 3
4. ☒ Oath or Declaration  
a. ☒ Newly executed *(original or copy)*      ☐ Unexecuted  
b. ☐ Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional application only)*  
c. ☒ With Power of Attorney      ☐ Without Power of Attorney  
d. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application,  
see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation By Reference *(usable if Box 4b is checked)*  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. ☐ Computer Program in Microfiche
7. ☐ Genetic Sequence Submission *(if applicable, all must be included)*  
a. ☐ Paper Copy  
b. ☐ Computer Readable Copy  
c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

**Accompanying Application Parts**

8. ☒ Assignment Papers *(cover sheet & documents)*
9. ☐ 37 CFR 3.73(b) Statement *(when there is an assignee)*
10. ☐ English Translation Document *(if applicable)*
11. ☐ Information Disclosure Statement/PTO-1449      ☐ Copies of IDS Citations
12. ☒ Preliminary Amendment
13. ☒ Acknowledgment postcard
14. ☐ Certificate of Mailing  
☐ First Class      ☐ Express Mail *(Specify Label No.):* \_\_\_\_\_

**UTILITY PATENT APPLICATION TRANSMITTAL**  
**(Small Entity)**

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Docket No.  
181/01332

Total Pages in this Submission  
33

**Accompanying Application Parts (Continued)**

15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. ☒ Small Entity Statement(s) - Specify Number of Statements Submitted: 1
17. ☐ Additional Enclosures (please identify below):


**Fee Calculation and Transmittal**

**CLAIMS AS FILED**

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	47	- 20 =	27	x \$9.00	\$243.00
Indep. Claims	4	- 3 =	1	x \$39.00	\$39.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$345.00
OTHER FEE (specify purpose)					\$0.00
TOTAL FILING FEE					\$627.00

- ☐ A check in the amount of \_\_\_\_\_ to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. 03-3419 as described below. A duplicate copy of this sheet is enclosed.
- ☒ Charge the amount of \$627.00 as filing fee.
- ☒ Credit any overpayment.
- ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Dated: April 17, 2000

  
Signature

Maier FENSTER, Reg. No. 41,016

Roy N. Envall, Jr., c/o Anthony Castorina  
cc: 2001 Jefferson Davis Highway, Suite 207  
Arlington, VA 22202 Tel: (703) 415-1581

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.9(f) AND 1.27 (c)) - SMALL BUSINESS CONCERN**Docket No.  
181/01332Serial No.  
CIP of PCT/IL99/00686Filing Date  
HEREWITH

Patent No.

Issue Date

Applicant/ Michael KOCHMAN, et al.  
Patentee:

Invention: MESSAGE DEVICE

I hereby declare that I am:

- ☐ the owner of the small business concern identified below:  
☒ an official of the small business concern empowered to act on behalf of the concern identified below;

NAME OF CONCERN: Tensor Technologies, LLCADDRESS OF CONCERN: 32 Timber Trail, Raunsey, NJ 07446, U.S.

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the above identified invention described in:

- ☒ the specification filed herewith with title as listed above.  
☐ the application identified above.  
☐ the patent identified above.

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed on the next page and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 CFR 1.9(c) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ no such person, concern or organization exists.  
☐ each such person, concern or organization is listed below.

FULL NAME			
ADDRESS			
	<input type="checkbox"/> Individual	<input type="checkbox"/> Small Business Concern	<input type="checkbox"/> Nonprofit Organization
FULL NAME			
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	<input type="checkbox"/> Individual	<input type="checkbox"/> Small Business Concern	<input type="checkbox"/> Nonprofit Organization
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FULL NAME			
ADDRESS			
	<input type="checkbox"/> Individual	<input type="checkbox"/> Small Business Concern	<input type="checkbox"/> Nonprofit Organization

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: Amir WALDMAN  
TITLE OF PERSON SIGNING \_\_\_\_\_  
OTHER THAN OWNER: President  
ADDRESS OF PERSON SIGNING: Moshav Yarkona 45915, Israel

SIGNATURE:

Amir Waldman

DATE:

4/9/2002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Michael KOCHMAN, et al  
Serial Number: NOT ASSIGNED  
Filed : HEREWITH  
For : MASSAGE DEVICE  
Art Unit : NOT ASSIGNED  
Examiner : NOT ASSIGNED

Honorable Commissioner of Patents and Trademarks  
Washington DC 20231

**PRELIMINARY AMENDMENT**

Sir:

Enclosed for filing simultaneously with the application is a Preliminary Amendment prepared prior to filing of the subject application.

**IN THE SPECIFICATION**

On page 1, lines 2-6 cancel and insert instead:

-- RELATED APPLICATION

This application is a continuation-in-part of PCT application Serial No. PCT/IL99/00686 filed on 15 December, 1999

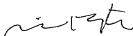
FIELD OF INVENTION

The present invention relates to improved devices for use in massaging the human body and more particularly to massage devices, especially useful and effective for substantially reducing cellulite caused skin deformities. --

**REMARKS**

The application is amended herein to improve the specification by conforming to current practice under Title 37 C.F.R. Section 1.77(c)(1).

Respectfully submitted,  
Michael KOCHMAN, et al



Maier Fenster  
Reg. No. 41,016

April 17, 2000  
Roy Envall  
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2001 Jefferson Davis Highway, Suite 207  
Arlington VA 22202

**MESSAGE DEVICE****FIELD OF THE INVENTION**

The present invention is a continuation-in-part of PCT application PCT/IL99/00686 filed on December 15, 1999 and relates to improved devices for use in massaging the human body and more particularly to massage devices, especially useful for substantially reducing cellulite caused skin deformities.

**BACKGROUND OF THE INVENTION**

Massage devices are designed to imitate the masseur's hands in manipulating the tissue of the subject undergoing the massage. Massages improve local circulation, muscle tone and relieve physical muscular tension, and therefore, are relaxing. Massaging also has been used in the past in attempting to remove deformities caused by cellulites. Cellulites are lumpy fat deposits that make a person's body look older. When the fat is deposited immediately below the dermis, the connective tissue elasticity is reduced. This reduction in connective tissue elasticity causes depressions at connective tissue anchor points. The result is a mottled, dimpled and lumpy appearance of the skin. Cellulites tend to gather, especially around the hips of females and the waists of males.

Masseurs more and more have turned to mechanical massage devices to aid them in the manipulating the folds of skin and subcutaneous tissue in attempts to break down the fat causing the cellulite condition. In the past, the mechanical massage devices have been designed to manipulate the skin and the adipose tissue by drawing the skin and fat deposits away from the underlying tissue into the mechanical massage device using vacuum chambers. The manipulations, in theory, move and rearrange the cells of the dermis and the underlying layers of fat. The idea is to reduce the amount of subcutaneous fat stores. In the past, the mechanical massage devices have reduced the fat deposits and improved the texture of the cellulose-afflicted skin, but only after a great many treatments.

Accordingly, a preferred embodiment of the invention provides a mechanical massage device that significantly reduces the number of treatments necessary to successfully combat cellulites. Exemplary embodiments successfully eliminate or significantly reduce the cellulite effects, in some cases with only a single treatment.

**SUMMARY OF THE INVENTION**

According to an aspect of the present invention, a mechanical massage device is provided, which makes it possible to perform massages that are much more effective in reducing and combating cellulites. More particularly, a mechanical massage apparatus is provided comprising a housing containing at least one tissue manipulating element within the

housing and extending therefrom that is used to stress and mobilize a subject's dermis and underlying adipose tissue, when the device is pressed against and moved along the surface of a subject to massage the subject. In the preferred aspect of the invention, the device further includes a radiant heat source for applying heat that passes through the dermis and impinges on underlying adipose tissue during the massage to more effectively combat the effect of the cellulite.

In one preferred embodiment of the invention, the elements within the housing and extending therefrom, comprise at least two elements, both arranged to extend on a single axis or on axes normal to the direction of motion of the device during the massage. In another preferred embodiment, at least two of the elements are arranged in tandem in the direction of motion of the massage device during massages.

In a preferred embodiment of the invention, the elements within the housing and extending therefrom comprise at least two coaxial spheres arranged to extend on an axis that is normal to the direction of motion of the mechanical massaging device during the massage treatment.

In another preferred aspect of the mechanical massaging device, at least one of the spheres is coupled to a drive motor, and thereby rotated on its axis.

In yet another preferred embodiment of the invention, the elements extending from the housing comprise at least a cylindrical roller, whose axis is generally perpendicular to the direction of movement of the massage device.

Whether the elements be rollers or spheres in accordance with an aspect of the invention, heat is applied during the massage through a separate radiant heat source, or alternatively or additionally the radiant heat source may be located within the elements, i.e. the spheres, or the roller or on the surface of the spheres or rollers.

In yet another preferred embodiment of the invention, the surfaces of the elements are irregular, so that the elements also further massage the top surface of the skin and tissue, so that the massage device tends to be self-propelled reducing the necessary effort of the masseur in moving the device.

Alternatively and/or additionally, in another preferred embodiment of the invention, the surfaces of the elements are smooth to minimize any pinching of the subject's skin.

It has been found that radiant heat applied during a massage penetrates below the skin to the adipose tissue and tends to homogenize the adipose tissue; thereby, reducing the cellulite in a much more efficient manner. In a preferred embodiment of the invention, the heat comprises radiant heat in the infra-red range. By controlling the wavelength of the radiation,



the heat may be made to better penetrate the surface of the skin to heat the fat deposits with minimal heating of the dermis and epidermis.

A further preferred aspect of the invention includes vacuumizing the casing holding the axially-aligned spheres or the rollers. Thus, the inventive device includes a housing, with elements within the housing extending therefrom, and a vacuum pump for lowering the pressure within the housing. The pump may be within the housing, or the housing may be attached to a source of vacuum. Radiant heat is applied to the area of the skin being massaged during the massaging operation. The combination of the massaging elements, the vacuum and the radiant heat, efficiently causes the adipose tissue to homogenize, and therefore makes it easier to spread and thereby destroy the cellulites.

There is thus provided, in accordance with a preferred embodiment of the invention a massaging apparatus comprising at least one massaging element rotatable within a housing, and extending therefrom to manipulate a subject's tissue, when the apparatus is applied to the subject; and said apparatus further including a radiant heat source for applying heat to the tissue. Preferably, the radiant heat source provides radiant heat having a wavelength in the range of 600 nm to 1500 nm.

In a preferred embodiment of the invention, the at least one massaging element comprises at least one substantially spherical massaging element. Alternatively, the at least one massaging element comprises at least one substantially cylindrical massaging element.

In another preferred embodiment of the invention, the massaging apparatus, comprises at least two massaging elements and the at least two massaging elements are mounted on a single axis. Alternatively or additionally, the at least two massaging elements are mounted on two separate axes. Preferably, the two separate axes are aligned. Alternatively, preferably the two separate axes are in tandem. Preferably, the at least one massaging element is motor-driven. Preferably, the at least one massaging element is motor-driven using gear coupling between the motor and the axis. Alternatively or additionally, the at least one massaging element is motor-driven using belt coupling between the axis and the motor. Alternatively or additionally, the at least one massaging element is motor driven using friction coupling between the axis or the element and the motor.

Preferably, the radiant heat source for applying heat to the tissue is a separate heat source removed from the massaging elements. Alternatively or additionally, the radiant heat source is located in the at least one massaging element. Alternatively or additionally, the radiant heat source is within the axis of the at least one massaging element. Alternatively or additionally, the radiant heat source is within at least one axis of said at least two massaging

elements. Alternatively or additionally, the radiant heat source is in an outer portion of the at least one massaging element. Alternatively or additionally, the radiant heat source is in an outer portion of the at least one of the at least two massaging elements.

In a preferred embodiment of the invention, a vacuum is included within the housing.

5 Preferably, a nozzle is provided for applying vacuum to the housing.

In a preferred embodiment of the invention, the at least two massaging elements mounted on a single axis are spherical elements. Alternatively or additionally, the at least two massaging elements mounted on the axes in tandem are spherical elements or cylindrical elements. Preferably, the at least one massaging element has a smooth surface. Alternatively or  
10 additionally, the at least two massaging elements have smooth surfaces.

There is further provided a massaging apparatus comprising at least one massaging element within a housing and extending therefrom, for manipulating the subject's tissue; the massaging element being substantially spherical; and a motor being coupled to said at least one massaging element for rotating said at least one massaging element. Preferably, the  
15 massaging apparatus includes a radiant heat source for applying heat to the tissue. Preferably, the massaging apparatus comprises at least two massaging elements.

In a preferred embodiment of the invention, chain coupling is used to couple said motor to said at least one massaging element. Alternatively or additionally, belt coupling is used to couple the motor to said at least one massaging element. Alternatively or additionally,  
20 friction coupling is used to couple the motor to the at least one massaging element. Alternatively or additionally, gear coupling is used to couple said motor to said at least one massaging element.

In a preferred embodiment of the invention, the at least two massaging elements are mounted on a single axis. Alternatively, preferably the at least two massaging elements are  
25 mounted on two separate axes. Preferably, the two separate axes are aligned. Preferably, the two separate axes are connected. Alternatively, preferably the two separate axes are in tandem. Preferably, the at least one massaging element has irregular surfaces.

There is further provided massaging apparatus comprising at least one massaging element rotating within a housing and extending therefrom to manipulate a subject's tissue;  
30 and the apparatus includes a heat source providing radiant heat that substantially passes through the skin and heats the fat. Preferably, the radiant heat has a wavelength in the range of 600-1500 nm.

The invention and the advantages which it provides will be understood more clearly when considered in the light of the following description of some embodiments thereof taken in conjunction with the following drawings, in which:

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an illustration of the inventive massage device with the cover removed;

Fig. 2A is a showing of the cellulite formation prior to massaging with the inventive massage device;

Fig. 2B shows a cellulite formation after massages with the inventive massage device;

Fig. 3A is a side view of the massage device with a portion of the housing removed showing a massaging element and other parts within the device;

Fig. 3B is a side view of the massage device with massaging elements in tandem; and

Fig. 4 is a pictorial showing of two cylindrical roller type massaging elements mounted in tandem.

#### DETAILED DESCRIPTION

The massage device 31 as shown in Fig. 1 includes a housing, the bottom portion of which (i.e., the part closer to the skin of the patient) is shown at 32. The housing has within it, as shown, a visible pair of massaging elements, shown as spheres 33 and 34, which, in operation, are placed juxtaposed to the skin of the subject.

The masseur applies pressure, and moves the device to massage the subject, preferably aided by a motor 38. The spheres are shown as being axially mounted in a row on axes 36 and 37. The axes may be inter-linked so that both of the spheres are driven by the motor 38. The motor drives the drive gear 39, which in turn drives a series of gears 41, 42, 43 and 44. Gear 44 is attached to either axis 36 or both axes 36 and 37 to drive both spheres 33 and 34. Alternatively, a belt drive, a chain drive or a friction drive (not shown) may be used to rotate at least one of the elements.

The housing is connected to a vacuum source. Alternatively, the motor 38 can include a vacuum pump. Preferably, the housing is connected to a vacuum source, which lowers the air pressure in the vacuum area 46. Because of the lower pressure, the subject's dermal and subdermal tissue is drawn toward the vacuum area as the device is manipulated by the masseur over the patient's skin. In a preferred embodiment, the vacuum specifications were a maximum flow rate of up to 10 cubic ft./min. at 22 inches of mercury.

In a preferred embodiment of the invention, radiant heat is applied during the massage. The heat source is shown as the heat lamp 51 which heats the tissue being operated on by the massaging device. The heating, in combination with the manipulation, homogenizes the

adipose tissue. It is build-up of fat that is the major cause of the reduction in elasticity of the skin at the adipose tissue which, in turn, causes depressions at the connective tissue anchor points, and results in the cellulite condition. Preferably, the heat source is an infra-red radiation source (in the 600 nm to 1500 nm range) that produces radiation that passes through the skin and heats the fat. Additionally or alternatively (in some preferred embodiments of the invention) the rollers contain the radiant heat source.

The cellulite-afflicted skin 56 is shown with the underlying fat tissue 59 in Fig. 2A. Fig. 2B shows how the cellulite condition is removed due to the manipulation of the heated adipose tissue. The consequent homogenization due to manipulation of the heated fat tends to move the fat and spread it evenly as shown at 60. This restores the elasticity of connecting tissue and removes the depressions at the connective tissue anchor points.

It should be understood that radiant heating elements could alternatively or additionally be mounted right in the outer shell portion of the elements, such as shown at 57 on sphere 34. Alternatively or additionally, heating elements could be placed within the axis of the massage device element, such as within axis 37 of the sphere, as shown at 58 in Fig. 1. When the heating element is in the axis or in the shell, then preferably the sphere is fabricated from a heat-resistant material that is transparent to the radiation of the source. Preferably, the wavelength of the radiation is only minimally absorbed by the dermis and is transmitted through the epidermis and dermis to heat the fat tissue. When the heating coil is in the shell of the elements, then it is powered using slip rings in any manner known to those skilled in the art.

In a preferred embodiment of the invention, the outer surfaces of the spheres are irregular. This enables the device to be mobile and move under its own power, which greatly aids the masseur in providing the massage, as well as providing additional skin manipulation.

The spheres 33, 34 are shown in Fig. 1. The massage elements could also be arranged axially, as shown in Fig. 1, or the elements could be mounted on different tandem axes, spaced apart from each other, such as illustrated in Fig. 3B. Combinations of axially mounted elements and tandem mounted elements are within the scope of some preferred embodiments of the invention.

While the tandem massage elements 33 and 34 are shown positioned relatively closely spaced apart in Fig. 3B, within the scope of the invention element 34 could be positioned further from element 33. The heat lamp 51 and motor 38 could be moved closer to element 33, then element 34 could be positioned on the far side of motor 38. Power may be coupled to the massage device as shown at power line 50 in Figs. 3A, 3B. Alternatively, rechargeable

batteries could be used as the power source. Preferably, the housing restricts the volume of its interior to insure the efficiency of the vacuum.

In Figs. 3A and 3B, a connector or nozzle for connecting the housing to a vacuum source is indicated at 47. A handle 48 is provided on the device. The handle facilitates the moving and pressing down on the device during a massage. A breakaway section of the housing enables viewing in Fig. 3A one of the massaging elements 34, and the motor 38, which drives the spheres. A heat lamp 51, providing radiant heat, is also indicated in this view. Fig. 3A is thus a side view of the arrangement of the device of Fig.1, where the massaging elements are mounted axially, while Fig. 3B shows the tandem mounting of the massaging elements. Preferably, the housing has flaps (not shown) which extend to the surface of the skin and act to maintain the vacuum in the housing.

The massage device elements could also be cylindrical rollers such as shown in Fig. 4, removed from the housing at 61 and 62. While two tandemly arranged rollers are shown, it should be understood that the rollers could also be arranged axially or a single roller could be used within the scope of the invention. The rollers are shown with axially-mounted heating elements 63 and 64.

The massage device, therefore, includes at least an element which extends from the vacuumized and heated housing or casing, enabling the elements to be movably pressed against the skin to manipulate the dermal and subcutaneous tissue of the patient. The manipulation of the skin and subcutaneous tissue is abetted since the skin and tissue are also being stressed by the vacuum. The manipulation and stressing in combination with the radiant heating homogenizes the fat tissue. The at least one massaging element is preferably motorized. The surface of the at least one massaging element is smooth. In preferred embodiments, the at least one massaging element is a sphere or ball fabricated from metal. Alternatively or additionally, the at least one massaging element is sphere or a cylinder fabricated from or coated with a plastic such as but not limited to Teflon.

A heat source is provided. The heat source can be separately located, such as the heating lamp 51. Alternatively or additionally, a heat source providing radiant heat can be located within the elements or on the surfaces of the elements themselves. The elements can have shapes including, but not limited to spheres or rollers. The axially-aligned spheres are found to manipulate more tissue per area traversed by the massage device than the prior art's cylindrical rollers arranged in parallel.

It should be apparent that the embodiment described herein is merely exemplary, and that a person skilled in the art may make many variations and modifications to the

embodiments as described herein. Any and all such variations or modifications, as well as other, which may become apparent to those skilled in the art, are intended to be included within the scope of the invention as defined by the appended claims.

The terms "include", "comprise" and "have" and their conjugates, as used herein mean  
 5 "including but not necessarily limited to."

CLAIMS

1. A massaging apparatus comprising:

at least one massaging element rotatable within a housing, and extending therefrom to

5 manipulate a subject's tissue, when the apparatus is applied to the subject; and

said apparatus further including a radiant heat source for applying heat to the tissue.

2. The massaging apparatus of claim 1 wherein said radiant heat source provides radiant heat having a wavelength in the range of 600 nm to 1500 nm.

10 3. The massaging apparatus of claim 1 wherein said at least one massaging element comprises at least one substantially spherical massaging element.

4. The massaging apparatus of claim 1 wherein said at least one massaging element  
15 comprises at least one substantially cylindrical massaging element.

5. The massaging apparatus of claim 1 wherein said at least one massaging element comprises at least two massaging elements.

20 6. The massaging apparatus of claim 5 wherein said at least two massaging elements are mounted on a single axis.

7. The massaging apparatus of claim 5 wherein the at least two massaging elements are mounted on two separate axes.

8. The massaging apparatus of claim 7 wherein the two separate axes are aligned.

9. The massaging apparatus of claim 7 wherein the two separate axes are in tandem.

30 10. The massaging apparatus of claim 1 wherein the at least one massaging element is motor-driven.

11. The massaging apparatus of claim 10 wherein the at least one massaging element is motor-driven using chain coupling between the motor and an axis.

12. The massaging apparatus of claim 10, wherein the at least one massaging element is motor-driven using belt coupling between an axis and the motor.

5 13. The massaging apparatus of claim 10 wherein the at least one massaging element is motor-driven using friction coupling between an axis and the motor.

14. The massaging apparatus of claim 10 wherein the at least one massaging element is motor driven using gear coupling between the axis and the motor.

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15. The massaging apparatus of claim 1 wherein said radiant heat source for applying heat to the tissue is a separate heat source removed from the at least one massaging element.

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23. The massaging apparatus of claim 6 wherein the at least two massaging elements mounted on a single axis are spherical elements.

24. The massaging apparatus of claim 9 wherein the at least two massaging elements mounted on the axes in tandem are cylindrical elements.

25. The massaging apparatus of claim 1 wherein the at least one massaging element has an irregular surface.

26. The massaging apparatus of claim 5 wherein at least one of said at least two massaging elements has irregular surfaces.

27. The massaging apparatus of claim 1 wherein the at least one massaging element has a smooth surface.

28. The massaging apparatus of claim 5 wherein the at least one of said at least two massaging elements has a smooth surface.

29. The massaging elements of claim 27 wherein the at least one massaging element is Teflon coated.

30. The massaging elements of claim 27 wherein the at least one massaging element is metallic.

31. A massaging apparatus comprising:  
at least one massaging element within a housing and extending therefrom, for manipulating a subject's tissue;  
said at least one massaging element being substantially spherical; and  
a motor coupled to said at least one massaging element for rotating said at least one massaging element.

32. The massaging apparatus of claim 31 including a radiant heat source for applying heat to the tissue.

33. The massaging apparatus of claim 31 wherein said at least one massaging element comprises at least two massaging elements.

5 34. The massaging apparatus of claim 31 wherein chain coupling is used to couple said motor to said at least one massaging element.

35. The massaging apparatus of claim 31 wherein belt coupling is used to couple said motor to said at least one massaging element.

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36. The massaging apparatus of claim 31 wherein friction coupling is used to couple said motor to said at least one massaging element.

37. The massaging apparatus of claim 31 wherein gear coupling is used to couple said  
15 motor to said at least one massaging element.

38. The massaging apparatus of claim 33 wherein the at least two massaging elements are mounted on a single axis.

20 39. The massaging apparatus of claim 33 wherein the at least two massaging elements are mounted on two separate axes.

40. The massaging apparatus of claim 39 wherein the two separate axes are aligned.

25 41. The massaging apparatus of claim 39 wherein the two separate axes are connected.

42. The massaging apparatus of claim 39 wherein the two separate axes are in tandem.

30 43. The massaging apparatus of claim 32 wherein the at least one massaging element has a smooth surface.

44. The massaging apparatus of claim 32 wherein the at least one massaging element has an irregular surface.

45. A massaging method comprising:  
 massaging a subject's tissue; while  
 providing radiant heat that substantially passes through the skin and heats the fat of the  
 5 subject.

46. The massaging method of claim 45 wherein the radiant heat has a wavelength in the  
 range of 600-1500 nm.

10 47. A massaging apparatus comprising:  
 at least two axes in tandem;  
 at least two spherical massaging elements on each of said at least two axes; and  
 a heat source providing radiant heat that passes through the skin and heats the  
 underlying fat.

ABSTRACT OF THE DISCLOSURE

A massaging apparatus that includes at least one massaging element in a housing and extending therefrom for use in manipulating a subject's tissue and further including a radiant heat source.

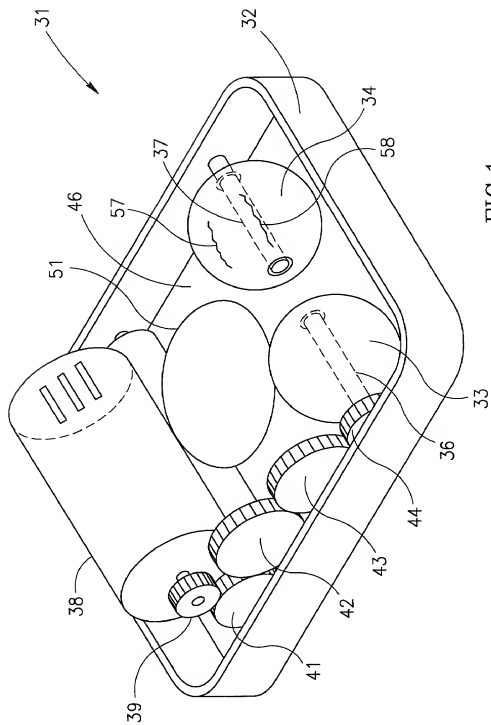


FIG. 1

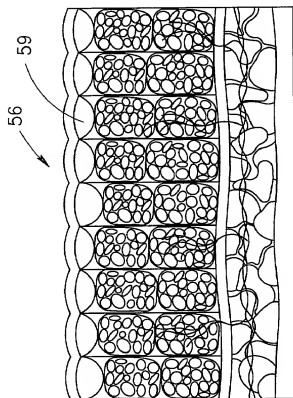


FIG. 2A

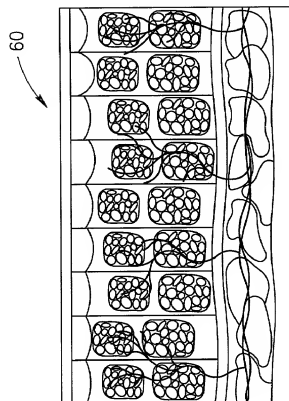


FIG. 2B

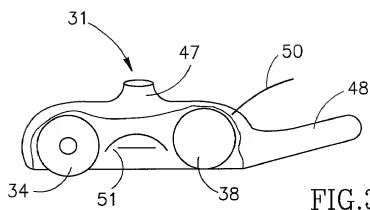


FIG. 3A

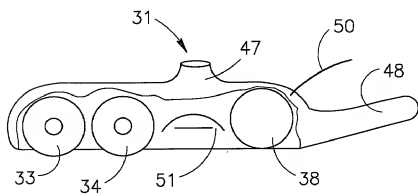


FIG. 3B

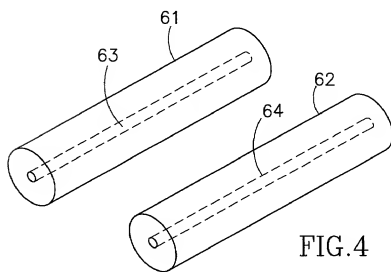


FIG. 4

Express Mail Label No.

Page 1 of 3

Docket No.  
181/01332**Declaration and Power of Attorney For Patent Application****English Language Declaration**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**MESSAGE DEVICE**

the specification of which

(check one)

☒ is attached hereto.☐ was filed on \_\_\_\_\_ as United States Application No. or PCT International

Application Number \_\_\_\_\_

and was amended on \_\_\_\_\_

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

(Number)

(Country)

(Day/Month/Year Filed)

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(Number)

(Country)

(Day/Month/Year Filed)

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I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

\_\_\_\_\_  
(Application Serial No.)

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(Filing Date)

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(Application Serial No.)

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(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

PCT/IL99/00686

December 15, 1999

pending

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\_\_\_\_\_  
(Status)  
(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

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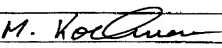
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